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EXAMINER

BRUENJES, CHRISTOPHER P

ART UNIT

PAPER NUMBER

1772

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/673,667

Applicant(s)

KUMAMOTO ET AL.

Examiner

Christopher P Bruenjes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

#### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 3, 2003 has been entered.

#### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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2. Claims 1-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,521,085. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of Patent '085 teach a pulp molded article made by the same process as the molded article of the instant invention from the same starting materials, and therefore inherently possess the same properties as the molded article of the instant invention such as having a center-line average roughness less than or equal to about 50 micrometers and a maximum roughness height of about 500 micrometers (Table 2) and a density of 0.4 to 2.0 g/cm<sup>3</sup> and a moisture permeability of 100 g/(m<sup>2</sup> 24hr) or less. Patent '085 further teaches that the pulp-molded article claimed includes a bottle, which has a cross-sectional body portion that is greater than the cross-sectional opening portion (Fig. 5 and 7a-7e).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the applicant's invention was made to make the article of the instant invention from the same paper starting stock and using the same method in order to form a pulp molded bottle having the same properties as the instant invention, in order to form a smooth surfaced improved

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pulp molded article, as taught by the claims in light of the specification of USPN 6,521,085.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 17, the limitation "maximum height" in lines 11 and 18, respectively, renders the claims vague and indefinite because it is not understood if the limitation is referring to the maximum roughness value or the height of the opening portion. Clarification is required.

Regarding claims 2-16 and 18-32 are rejected as dependent on rejected claims.

***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claim 1-3, 13, 17-19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043).

Hicks teaches a molded article (Fig.4) comprising pulp having an opening portion, a body portion, and a bottom portion, wherein said body portion has no seams (col.1, 1.53-58) and said body portion has a least one cross-sectional diameter greater than the opening portion and of another corresponding diameter of said body portion (Fig.4). Hicks also teaches a molded

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article wherein all the cross-sectional diameters of said body portion are greater than corresponding cross-sectional diameters of said opening portion (Fig.4). All of the cross-sectional diameters fall along the same vertical plane. Hicks also teaches a molded article that has no seams over the portion from said body portion to said bottom portion (col.1, 1.53-58). Hicks also teaches that the molded article is obtainable by heat drying in which the wet pulp deposited body is pressed against the inner wall of a mold and dried before transferring from the mold (col.2, 1.28-34). The molded article is formed by inflating a pressing member by feeding a pressurizing fluid into said pressing member (col.2, 1.16-28). Note that applicant in claims 13 and 32 claim a limitation of heat drying the molded article and steps for performing that process which is a process limitation introduced into a product claim, hence, such are given little patentable weight. Also the limitation in claim 17 of how the molded article is formed and how much pressure is applied to the pressing member is also a process limitation, which receives little patentable weight. Hicks fails to explicitly teach a roughness value for the inside and outside surface of the molded article including the top edge of the opening portion. Hicks also teaches that it is desirable that a container made of pulp is smooth to provide an acceptable

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appearance and to avoid possible contamination of the contained substance. Also, a smoothly finished surface may be more easily coated with a protective covering or film (col.1, 1.35-39). If the interior surface is desired to be smooth the outside surface can also be smooth. One of ordinary skill in the art would have recognized that a smooth mold, as used for the interior surface, is used for the outside surface and top edge of the opening portion as well to create a bottle having smooth surfaces on the inside, outside, and top edge of the opening portion, in order to provide an acceptable appearance, avoid contamination, and provide a surface in which a protective coating is more easily applied, as taught by Hicks.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the Applicant's invention was made to make a bottle with an inner and outer surface and top edge of the opening portion that are smooth with a roughness of less than or equal to 50 micrometers with a roughness maximum of less than 500 micrometers, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, in the absence of showing unexpected result. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).



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5. Claims 1-3, 9, 13-19, 25-28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043) in view of Stevens (USPN 2,590,221).

Hicks teaches a molded article (Fig.4) comprising pulp having an opening portion, a body portion, and a bottom portion, wherein said body portion has no seams (col.1, 1.53-58) and said body portion has a least one cross-sectional diameter greater than the opening portion and of another corresponding diameter of said body portion (Fig.4). Hicks also teaches a molded article wherein all the cross-sectional diameters of said body portion are greater than corresponding cross-sectional diameters of said opening portion (Fig.4). All of the cross-sectional diameters fall along the same vertical plane. Hicks also teaches a molded article that has no seams over the portion from said body portion to said bottom portion (col.1, 1.53-58). Hicks also teaches that the molded article is obtainable by heat drying in which the wet pulp deposited body is pressed against the inner wall of a mold and dried before transferring from the mold (col.2, 1.28-34). The molded article is formed by inflating a pressing member by feeding a pressurizing fluid into said pressing member (col.2, 1.16-28). Note that applicant in claims 13 and 32 claim a limitation of heat drying the molded article and steps for performing that process which is a process

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limitation introduced into a product claim, hence, such are given little patentable weight. Also the limitation in claim 17 of how the molded article is formed and how much pressure is applied to the pressing member is also a process limitation, which receives little patentable weight. Hicks also teaches that it is desirable that a container made of pulp is smooth to provide an acceptable appearance and to avoid possible contamination of the contained substance. Also, a smoothly finished surface may be more easily coated with a protective covering or film (col.1, 1.35-39). Hicks fails to explicitly teach a roughness value for the inside and outside surface and the top edge of the opening portion of the molded article or a plastic layer on the outer or inner surfaces of the pulp-molded article. However, Stevens teaches a molded pulp article that is molded and dried in its ultimate shape without creases, folds or score lines of any kind in its surface, produced by suction molding or vacuum forming from wood pulp (col.1-2, lines 49-10). Over the interior or exterior or both of the molded pulp article a thin plastic film is laminated (col.2, lines 13-17). Stevens also teaches that the fibrous surface is heated to a temperature causing the plastic to be flowable or tacky, therefore making it a resin, in order to apply it to the molded article (col.2, lines 17-30). The plastic added by Stevens to the molded

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article is any of a number of resin solutions or emulsions (col.4 lines 6-30). The molded article has an interior liner or exterior covering, or both added, in order to render the wall of the article impervious to vapors and liquids (col.1, lines 1-5). A heated die is pressed against the pulp layer to produce a smooth even surface in order to contact the thin sheet of plastic material that also has a smooth even surface (col.4, 11.47-54). The plastic sheet is formed by suction or vacuum forming in a die with smooth surfaces (col.5, 11.21-25), and only the surface contacting the pulp layer is heated to flow into the interstices of the contacting fibrous surface (col.2, 11.20-30). Therefore, the article after applying the plastic layer is obviously smooth with a roughness below 50 micrometers. Note that applicant in claims 9 and 14 claims the limitations of laminating and applying a plastic film or resin solution which are process limitations introduced into product claims, hence, such are given little patentable weight. Therefore, one of ordinary skill in the art would have recognized that an interior or exterior covering of plastic film or resin solution is laminated or applied to a molded pulp article in order to make the article impervious to vapors and liquids as taught by Stevens.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to laminate a plastic film or apply a resin solution to the molded pulp article of Hicks in order to make the article impervious to vapors and liquids as taught by Stevens and by adding the resin solution to the inner and outer surface of the pulp layer, the inner surface and outer surface and top edge of the opening portion of the article comprising a pulp layer would obviously have a roughness of less than 50 micrometers and a maximum height less than 500 micrometers. Also it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, in the absence of showing unexpected result. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Claim 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043), alone or in combination with Stevens (USPN 2,590,221), in view of Kelley et al (USPN 5,356,518).

Hicks alone or combined with Stevens teach the molded article claimed in claims 1 and 17 and Hicks teaches that the molded article has a lip on said opening portion for connection of a cap to the molded article, but Hicks fails to teach a screw

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thread on said opening portion. However, Kelley et al teach a paper container (Fig.6) of sufficient strength and detailing that a thread is provided on an opening portion that is distinct and strong enough for a threaded cap to be removably secured thereto (col.5, lines 57-61). Therefore, one of ordinary skill in the art would have recognized that a screw thread is molded to the opening portion of a paper container in order to provide a connection for a threaded cap to be removably secured thereto, as taught by Kelley et al.

Thus, it would have been obvious to one of ordinary skill at the time the applicant's invention was made to mold a screw thread on the opening portion of Hicks alone or combined with Stevens, in order for a threaded cap to be removably secured thereto, as taught by Kelley et al.

7. Claim 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043), alone or in combination with Stevens (USPN 2,590,221) in view of Utsul et al (EP 562,590 A1).

Hicks alone or combined with Stevens teach all that is claimed in claims 1 and 17, but fails to teach a specific article density. However, Utsul et al teach a molded pulp article having a density that is at least  $0.3\text{g/cm}^3$ , which is very

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high compared with the conventional molded pulp containers, and hence is excellent in mechanical strength such as bending strength and stiffness (col.2, lines 37-42). Therefore, one of ordinary skill in the art would have recognized that a molded pulp article has a density greater than  $0.3\text{g/cm}^3$  in order for the container to have excellent mechanical strength, as taught by Utsul et al.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to mold the pulp article of Hicks alone or combined with Stevens, to have a density greater than  $0.3\text{g/cm}^3$  in order to for the container to have high mechanical strength such as bending strength and stiffness, as taught by Utsul et al.

8. Claims 6-8 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043), alone or in combination with Stevens (USPN 2,590,221) in view of Kakemura et al (USPN 5,968,616).

Hicks alone or combined with Stevens teach all that is claimed in claims 1 and 17 and that bottles and cups are produced as molded paper articles (p.7, lines 29-32), but fails to teach a moisture permeability value or that an article has a corner or an opening portion whose thickness is greater than

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other portions of said article. However, Kakemura et al teach that a molded article comprising pulp (see abstract) with an inner volume of 1L (col. 11, lines 20-22) which has a moisture permeability of 0.01-0.02 g/pkg/day (equal to 10-20g/m<sup>2</sup>/day) (col.11, lines 49-58) in order to have a high water vapor barrier property for contents-keeping quality (col.1, lines 30-35). Kakemura et al also teach an article with a corner and an opening portion whose thickness is greater than other portion of said article (Fig.7) in order to provide extra strength to the corners and opening portion for the drop test. Therefore, on of ordinary skill in the art would have recognized that a molded pulp article used for containing liquids would have a moisture permeability of less than 100g/m<sup>2</sup>/day in order to have sufficient contents-keeping quality and to have corners and an opening portion whose thickness is greater than other portions of said article in order to provide extra strength to the corners and opening portion for drop strength, as taught by Kakemura et al.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to mold the pulp article of Hicks alone or combined with Stevens to the specifications of moisture permeability of Kakemura et al and mold the corners and the opening portion to have greater

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thickness than the other portions of the article, in order to have sufficient contents-keeping quality and extra drop strength for the corners and opening portion, as taught by Kakemura et al.

9. Claim 11 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043), alone or in combination with Stevens (USPN 2,590,221) in further view of Brennan (USPN 4,014,737).

Hicks alone or combined with Stevens teach all that is claimed in claims 1 and 17, but fails to teach specific specifications of the pulp fibers used to produce the molded pulp article. However, Brennan teaches a molded pulp article that uses pulp slurry having at least 50% fibers having a length in excess of 1mm, in order to provide molded pulp articles having greater strength, that are easier to dry, and have a greater capability of venting steam from a mold. Furthermore, the exact parameters of fiber distribution of fiber length and the Canadian Standard Freeness claimed by the applicant would have been determined by routine experimentation by one having ordinary skill in the art. Note that limitations on the parameters of the starting materials for an article does not necessarily affect the structure of the article, the starting



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material limitations receive little patentable weight unless an unexpected result is provided. Therefore, one of ordinary skill in the art would have recognized to select the parameters for the fibers used in the pulp slurry for making the molded pulp article within applicant's claimed range to have provide molded pulp articles having greater strength, that are easier to dry, and have a greater capability of venting steam from a mold, as taught by Brennan.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have selected the specific parameters of the fibers used in forming the molded pulp article of Hicks alone or combined with Stevens within the applicant's claimed range in order to provide the article with greater strength and make it easier to dry when molding, as taught by Brennan.

10. Claims 10 and 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043), alone or in combination with Stevens (USPN 2,590,221) in view of Mitchell et al (USPN 6,010,595).

Hicks alone or combined with Stevens teach all that is claimed in claims 1 and 17, but fails to teach a multilayered pulp structure. However, Mitchell et al teach a multiply paper

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structure for containers for liquids comprising a first pulp layer made from cellulose pulp fiber, a second pulp layer made from a mixture of cellulose pulp fiber and cellulose ester fibers with inherently a mixed layer between the first and second (col.2, lines 48-52). The multiply paper structure is utilized in order to overcome the disadvantages a single untreated paper layer has including being permeable to water and other aqueous liquids, and in the thickness desirable, it lacks adequate rigidity (col.1, lines 30-38). Therefore, one of ordinary skill in the art would have recognized that adding multiple layers of different pulps in order to make the molded pulp article impermeable to liquids and provide an adequate rigidity enhances a molded pulp article, as taught by Mitchell et al.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to make the molded pulp article of Hicks alone or combined with Stevens from multiple layers of different pulps in order to make the molded pulp article impermeable to liquids and provide an adequate rigidity, as taught by Mitchell et al.

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11. Claim 12 and 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks (USPN 2,961,043) in view of Mitchell et al (USPN 6,010,595) in further view of Brennan (USPN 4,014,737). Hicks teaches all that is claimed in claims 1 and 17, but fails to teach a multilayered pulp structure. Mitchell et al teaches a multilayered structure having an innermost and outermost layer (see abstract) wherein the pulp slurry forming the outermost layer contains fibers with Canadian Standard freeness of 362cc (col.7, lines 51-57) and the pulp slurry forming the innermost layer contains fibers with Canadian Standard freeness of 226cc (col.7, lines 57-65). Mitchell and Hicks fail to teach fiber length for the pulp slurry forming either layer, however, Brennan teaches that a molded pulp article that uses pulp slurry having at least 50% fibers having a length in excess of 1mm, in order to provide molded pulp articles having greater strength, that are easier to dry, and have a greater capability of venting steam from a mold. Furthermore, the exact parameters of fiber distribution of fiber length claimed by the applicant would have been determined by routine experimentation by one having ordinary skill in the art. Note that limitations on the parameters of starting materials for an article does not necessarily affect the structure of the article, the starting material limitations receive little patentable weight unless an

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unexpected result is provided. Therefore, one of ordinary skill in the art would have recognized to make a molded pulp article from multiple pulp layers in order to make the article impermeable to liquids and provide adequate rigidity, as taught by Mitchell et al., and to select the parameters for the fibers used in the pulp slurry for making the multiple layered structure of the molded pulp article within applicant's claimed ranges to provide molded pulp articles having greater strength, that are easier to dry, and have a greater capability of venting steam from a mold, as taught by Brennan.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to make the molded pulp article of Hicks from multiple pulp layers in order to make the article impermeable to liquids and provide adequate rigidity, as taught by Mitchell et al. and to select the specific parameters of the fibers used in forming the multiple layered structure of the molded pulp article within the applicant's claimed ranges in order to provide the article with greater strength and make it easier to dry when molding, as taught by Brennan.

***ANSWERS TO APPLICANT'S ARGUMENTS***

12. Applicant's arguments filed in Paper #20 regarding the 35 U.S.C. 103 rejections of claims 1-3, 13, 17-19, and 32 over Hicks have been fully considered but they are not persuasive.

In response to Applicant's argument that Hicks fails to suggest roughness values below 50 micrometers for the inside and outside surfaces and the top edge of the opening portion, Examiner admits that Hicks does not explicitly teach these roughness values, however, Hicks does suggest that the surfaces should be smooth in order to provide an acceptable appearance, avoid contamination, and provide a surface in which a protective coating is more easily applied. Furthermore, one of ordinary skill in the art would have discovered the optimum value of a the result effective variable of a roughness of less than 50 micrometers and a maximum height of less than 500 micrometers, since it has been held that discovering an optimum value involves only routine skill in the art, absent the showing of unexpected result. Hicks teaches the same reasons for making the surfaces smooth and evidence is provided to distinguish how having a roughness greater or less than 50 micrometers, specifically, provides unexpected result to the pulp molded bottle.

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13. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 1-3, 9, 13-19, 25-28, and 32 over Hicks in view of Stevens have been fully considered but are not persuasive.

In response to Applicant's argument that neither Hicks nor Stevens teach that the top edge of the opening portion has a center-line average roughness of 50 micrometers or less and a height of about 500 micrometers or less, Stevens teaches a smooth plastic coating applied to both surfaces of the pulp molded article and therefore would also cover the top edge of the opening portion of the pulp molded article. The plastic sheet is formed by suction or vacuum forming in a die with smooth surfaces (col.5, 1.21-25), and only the surface contacting the pulp layer is heated to flow into the interstices of the contacting fibrous surface, therefore the pulp molded article after the plastic layer is applied is obviously smooth with a roughness below 50 micrometers and a maximum height below 500 micrometers. Furthermore, one of ordinary skill in the art would have discovered the optimum value of a the result effective variable of a roughness of less than 50 micrometers and a maximum height of less than 500 micrometers, since it has been held that discovering an optimum value involves only routine skill in the art, absent the showing of unexpected

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result. No evidence is provided to distinguish how having a roughness greater or less than 50 micrometers and a maximum height of less than 500 micrometers, specifically, provides unexpected result to the pulp-molded bottle.

In response to applicant's argument that there is no basis in the teachings of Stevens or Hicks to combine, both Hicks and Stevens teach pulp-molded containers for storage of products. Stevens teaches that pulp-molded containers are optionally provided with thin sheet of plastic material on the inner or outer surface in order to make the container impervious to vapors and liquids. The examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. See *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken, as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971), references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. See *In re Bozek*, 163 USPQ 545 (CCPA 1969). In this case, one of ordinary skill in the art would have

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recognized that depending on the product used in the container of Hicks or Stevens that a plastic material would be added to the inner surface or outer surface of the article, in order to provide a barrier layer for the product contained, as taught by Stevens.

14. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 4 and 20 over Hicks alone or in combination with Stevens in view of Kelley et al have been fully considered but are not persuasive.

In response to Applicant's argument that Kelly does not remedy the defects above-noted with regard to Hicks and Stevens, Kelly is not relied upon to teach certain roughness values for the surfaces of the pulp molded article and the answer to applicant's arguments with regard to the roughness values are presented above in response to the 35 U.S.C. 103 rejections over Hicks alone and Hicks and Stevens combined.

In response to Applicant's argument that there is no basis in the teachings of Stevens or Hicks to combine with Kelley, all three references teach pulp-molded containers for storage of products. Kelley teaches that pulp-molded containers are optionally provided with thread on an opening portion in order to provide a connection for a threaded cap to be removably



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secured thereto. The examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. See *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971), references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. See *In re Bozek*, 163 USPQ 545 (CCPA 1969). In this case, one of ordinary skill in the art would have recognized that the references taken as whole teach that pulp-molded containers are known to have threads on the opening portion in order to provide a strong connection for a removable lid or cap, as taught by Kelley.

15. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 5 and 21 over Hicks alone or in combination with Stevens in view of Utsul et al have been fully considered but are not persuasive.

In response to Applicant's argument that Utsul does not remedy the defects above-noted with regard to Hicks and Stevens, Utsul is not relied upon to teach certain roughness values for the surfaces of the pulp molded article and the answer to applicant's arguments with regard to the roughness values are presented above in response to the 35 U.S.C. 103 rejections over Hicks alone and Hicks and Stevens combined.

In response to Applicant's argument that there is no basis in the teachings of Stevens or Hicks to combine with Utsul, all three references teach pulp-molded containers for storage of products. Utsul teaches that pulp-molded containers are made from pulp with a density that is at least  $0.3\text{g/cm}^3$ , in order to provide the container with excellent mechanical strength such as bending strength and stiffness, which one of ordinary skill in the art would recognize as beneficial properties for a container depending on the intended use of the container. The examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. See *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures

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taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971), references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. See *In re Bozek*, 163 USPQ 545 (CCPA 1969). In this case, one of ordinary skill in the art would have recognized that the references taken as whole teach that pulp-molded containers are known to be formed with a density greater than  $0.3 \text{ g/cm}^3$  in order to provide the container with high bending strength and stiffness, which is beneficial depending on the intended use of the container, as taught by Utsul.

16. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 6-8 and 22-24 over Hicks alone or in combination with Stevens in view of Kakemura have been fully considered but are not persuasive.

In response to Applicant's argument that Kakemura does not remedy the defects above-noted with regard to Hicks and Stevens, Kakemura is not relied upon to teach certain roughness values for the surfaces of the pulp molded article and the answer to applicant's arguments with regard to the roughness values are presented above in response to the 35 U.S.C. 103 rejections over Hicks alone and Hicks and Stevens combined.

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17. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 11 and 30 over Hicks alone or in combination with Stevens in view of Brennan have been fully considered but are not persuasive.

In response to Applicant's argument that Brennan does not remedy the defects above-noted with regard to Hicks and Stevens, Brennan is not relied upon to teach certain roughness values for the surfaces of the pulp molded article and the answer to applicant's arguments with regard to the roughness values are presented above in response to the 35 U.S.C. 103 rejections over Hicks alone and Hicks and Stevens combined.

18. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 10 and 29 over Hicks alone or in combination with Stevens in view of Mitchell have been fully considered but are not persuasive.

In response to Applicant's argument that Mitchell does not remedy the defects above-noted with regard to Hicks and Stevens, Mitchell is not relied upon to teach certain roughness values for the surfaces of the pulp molded article and the answer to applicant's arguments with regard to the roughness values are

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presented above in response to the 35 U.S.C. 103 rejections over Hicks alone and Hicks and Stevens combined.

19. Applicant's arguments regarding the 35 U.S.C. 103 rejections of claims 12 and 31 over Hicks alone or in combination with Stevens in view of Mitchell and in further view of Brennan have been fully considered but are not persuasive.

In response to Applicant's argument that Mitchell and Brennan do not remedy the defects above-noted with regard to Hicks and Stevens, Mitchell and Brennan are not relied upon to teach certain roughness values for the surfaces of the pulp molded article and the answer to applicant's arguments with regard to the roughness values are presented above in response to the 35 U.S.C. 103 rejections over Hicks alone and Hicks and Stevens combined.

#### **Conclusion**

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P Bruenjes whose telephone number is 703-305-3440. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 703-308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Christopher P Bruenjes  
Examiner  
Art Unit 1772

CPB

August 1, 2003



  
NASSER AHMAD  
PRIMARY EXAMINER  
Acting SPE